was performed in 5, and stents were implanted in 4 cases. In all patients clinical improvement was observed, with palpable popliteal/foot pulses. In the 30-day observation, 1 case of subcutaneous hematoma was observed that did not require surgical treatment. In further observation, the patient underwent revision of the popliteal artery without bypass surgery. 2 months after the procedure, one patient underwent balloon angioplasty of the Common Femoral Artery bifurcation without any intervention on the previously stented segment of the SFA. 4 months after the procedure, another patient developed recurrent claudication with angiographically confirmed long SFA occlusion. The recanalization attempt was unsuccessful. In February 2011, 8 patients underwent control angiography to assess the patency of the treated SFA segment and, when needed, to qualify them for the next stage procedure. In 5 patients there was no significant restenosis at the treated segment, in 3 cases such changes were found and they required a balloon angioplasty without stent implantation.
Conclusion: OCELOT catheter is a novel device and can be safely use for recanalization of the occluded arteries. It allows, with high efficiency, to avoid subintimal angioplasty and may reduce the need of stent implantation. Further observations will help to assess the long term results. It seems reasonable to use Drug Eluting Balloons in next studies.

TCT-601

Midterm Outcomes of S.M.A.R.T. Self-Expanding Nitinol Stent Implantation for Chronic Total Occlusion of Superficial Femoral Artery

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Background: Although endovascular treatment (EVT) became first-line therapy for peripheral artery disease (PAD), superficial femoral artery (SFA) lesion is still controversial especially in complex lesion such as chronic total occlusion (CTO). We investigated midterm patency rate and predictor of restenosis after S.M.A.R.T. self-expanding nitinol stent implantation for CTO in SFA lesion over large multicenter registry data.
Methods: From March 2003 to December 2009, serial 940 arteriosclerosis obliterans patients, 1087 limbs had EVT implanted self-expanding nitinol stent for SFA at 4 hospitals in Japan. Of the cohort, 347 patients 379 limbs implanted S.M.A.R.T. self-expanding nitinol stent for CTO in SFA and followed for 5 years. We retrospectively investigated the outcomes, primary and secondary patency rate using Kaplan-Meier method with logrank test, multivariate analysis used to predict factors associated with restenosis.
Results: Mean age was 73±9.4 years and female was 32%. Fifty nine percent of patients had diabetes mellitus, 12% of patients required hemodialysis and 24% was critical limbs ischemia patients. Average ABI before procedure was 0.56±0.20. In lesion morphology, occluded length was 195±89 mm, 26% was TASC II AB and 74% was TASC II CD lesion. Also, reference vessel diameter was 5.4±0.8mm. Mean total stent length was 198±87 mm, mean stent diameter was 7.0±1.0mm. In the clinical outcomes 13 limbs (3.4%) had major amputation and 9 limbs (2.4%) went to surgery. Forty eight limbs, 13% detected stent fracture through study period. Five years primary and secondary patency rate was 68% and 97%, respectively. On multivariate analysis, female gender (odds ratio, 2.41; p=0.0006), renal insufficiency requiring hemodialysis (odds ratio, 3.01; p=0.0023), administration of cilostazole (odds ratio, 0.60; p=0.0372), stent fracture (odds ratio, 2.37; p=0.0131), was the factors associated with restenosis.
Conclusion: Patency rate after S.M.A.R.T. self-expanding nitinol stent implantation for CTO in SFA lesion up to 5 years seems acceptable. Strong atherosclerotic agents may associate with restenosis and new stent device tolerate with physical stress, administration of cilostazole may improve the outcomes.

Coronary Angiography and CTA

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TCT-602

Matrix metalloproteinases can predict the progression of non-culprit lesion

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Background: Matrix metalloproteinase (MMP-9) not only is involved in both inflammation and matrix degradation but also is prevalent in the arterial wall throughout the arterial system. The CD40-CD40L system is a pathway which is associated with both prothrombotic and proinflammatory effects. The soluble form of CD40L (sCD40L) is derived mainly from activated platelets and contributes to the pathophysiology of atherosclerosis. We hypothesized that MMP-9 and sCD40L may mediate in the development and progression of atherosclerotic lesions. The aim of the study is to explore the association between serum levels of MMP-9 and sCD40L and the development and progression of non culprit lesions in patients with coronary artery disease(CAD).
Methods: We included 80 patients (64 men and 16 women) who underwent two coronary angiograms with a time interval greater than three months. The culprit lesion of the first angiogram was clearly identified by a combination of ECG, wall motion abnormalities, scintigraphic perfusion defects and coronary angiogram. All patients underwent percutaneous coronary intervention as a treatment for the culprit lesion. In the second coronary angiography we investigated whether they had a new culprit lesion clearly differentiated from the culprit lesion of the first angiogram. Samples for plasma were obtained on admission before the second angiography in all patients. MMP-9 and sCD40L were assessed by enzyme-linked immunosorbent assay.
Results: In 43 cases was observed progression of the non culprit lesions between the two angiograms. The mean follow up period was 48 ± 12 months. Mean concentration of sCD40L was not associated with the progression of the non culprit lesions of the coronary arteries. However significant association of serum levels of the MMP-9 and the progression of the non culprit lesions in the coronary arteries was observed. The subjects with progression of the non culprit lesions had increased mean serum concentration of MMP-9 in comparison with those that didn't have any plaque progression during the follow up period (9.56 ±4.54 ng/L versus 7.43 ±3.23 ng/L, p=0.007).
Conclusion: The mean concentration of serum levels of MMP-9 in this study was related to progression of the non culprit lesions in coronary arteries in contrast with serum levels of sCD40L that seem not to be associated.

TCT-603

Incidence, Morphological Pattern, and Time Course of Peri-stent Contrast Staining

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Background: Peri-stent contrast staining (PSS) is an abnormal angiographic finding at the stent implantation site suggesting contrast staining outside the stent struts, which does not fulfill the classical definition of coronary artery aneurysm. Imai et al. reported that PSS found after sirolimus-eluting stent implantation appeared to be associated with very late stent thrombosis (VLST). However, differences in incidence, morphological pattern, and time course of PSS between drug-eluting stent (DES) and bare metal stent (BMS) remain unknown.
Methods: We retrospectively analyzed 6872 lesions with stent implantation from 2001 to 2008. PSS was defined as contrast staining outside the stent contour extending to 20% of the stent diameter. A morphological classification of PSS included monofocal, multifocal, segmental with irregular, and segmental with smooth. Time course was classified three types (Regression, no change, progression)
Results: PSS was observed in 131 (1.9%) of the 6872 lesions: BMS, 2.2% (29/1345); DES, 1.9% (102/5528); p=ns. As shown in the table, however, there were differences in morphological pattern and time course. Morphologically, monofocal of PSS was observed more frequent in BMS, and segmental irregular was more frequent in DES. Regarding the time course, regression type was dominant in BMS. VLST occurred in 6 PSS lesions, of which 4 were segmental irregular and 5 were progression type. No stent thrombosis occurred in BMS.

Morphology n	BMS (%) 29	DES (%) 102	P
Focal			
Monofocal	35.7	17.1	0.02
Multifocal	17.9	9.9	ns
Segmental			
Segmental Smooth	39.3	31.5	ns
Segmental Irregular	7.1	41.4	0.001

Time Course	BMS (%)	DES (%)	P
Regression	75.9	34.3	ns
No Change	24.1	31.4	ns
Progression	0.0	34.3	<0.001

Incidence, Morphological Pattern, and Time Course of PSS Between BMS and DES

Conclusion: Although there was no difference in the incidence of PSS between BMS and DES, morphological pattern and time course were different.

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